

**What is Claimed:**

1. A packet based terminal device addressing system for enabling a calling party using a circuit based terminal device, which is addressable via a telephone number, to initiate a communication connection to a called party who is using a packet-based terminal device, which is addressable via an IP address, comprising:

5 means for storing data in a memory indicative of a correspondence between at least one IP address assigned to a called party's packet-based terminal device and a telephone number assigned to said called party's circuit-based terminal device;

10 means, responsive to receipt of data from said calling party indicative of said called party's telephone number corresponding to said called party's circuit-based terminal device, for retrieving data from said memory indicative of said IP address assigned to a called party's packet-based terminal device; and

15 means for establishing a communication connection between said calling party's circuit-based terminal device to said called party's packet-based terminal device.

2. The packet based terminal device addressing system of claim 1 wherein said means for establishing comprises:

20 means for transmitting said IP address assigned to said called party's packet-based terminal device to at least one packet-based communication service to locate said called party's packet-based terminal device.

3. The packet based terminal device addressing system of claim 2 wherein said means for establishing further comprises:

25 means, responsive to receipt of a message from one of said at least one packet-based communication services indicative of a presence of said called party's packet-based terminal device on said one of said at least one packet-based communication services, for extending a communication connection from said calling

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party's circuit-based terminal device to said one of said at least one packet-based communication services.

4. The packet based terminal device addressing system of claim 1 wherein

5 said means for storing comprises:

means for storing a set of data comprising data indicative of an IP address assigned to each of a plurality of a called party's packet-based terminal devices.

5. The packet based terminal device addressing system of claim 4 wherein

10 said means for retrieving comprises:

means for providing said calling party with a list of said called party's packet-based terminal devices; and

means, responsive to said calling party selecting a one of said called party's packet-based terminal devices, for identifying a packet-based communication service 15 serving said called party's packet-based terminal device.

6. A method of operating a packet based terminal device addressing system for enabling a calling party using a circuit based terminal device, which is addressable via a telephone number, to initiate a communication connection to a 20 called party who is using a packet-based terminal device, which is addressable via an IP address, comprising the steps of:

storing data in a memory indicative of a correspondence between at least one IP address assigned to a called party's packet-based terminal device and a telephone number assigned to said called party's circuit-based terminal device;

25 retrieving, in response to receipt of data from said calling party indicative of said called party's telephone number corresponding to said called party's circuit-based terminal device, data from said memory indicative of said IP address assigned to a called party's packet-based terminal device; and

establishing a communication connection between said calling party's circuit-

based terminal device to said called party's packet-based terminal device.

7. The method of operating a packet based terminal device addressing system of claim 6 wherein said step of establishing comprises:

5 transmitting said IP address assigned to said called party's packet-based terminal device to at least one packet-based communication service to locate said called party's packet-based terminal device.

8. The method of operating a packet based terminal device addressing system of claim 7 wherein said step of establishing further comprises:

10 extending, in response to receipt of a message from one of said at least one packet-based communication services indicative of a presence of said called party's packet-based terminal device on said one of said at least one packet-based communication services, a communication connection from said calling party's circuit-based terminal device to said one of said at least one packet-based communication services.

15 9. The method of operating a packet based terminal device addressing system of claim 6 wherein said step of storing in a memory comprises:

20 storing a set of data comprising data indicative of an IP address assigned to each of a plurality of a called party's packet-based terminal devices.

10. The method of operating a packet based terminal device addressing system of claim 9 wherein said step of retrieving comprises:

25 providing said calling party with a list of said called party's packet-based terminal devices; and

identifying, in response to said calling party selecting a one of said called party's packet-based terminal devices, a packet-based communication service serving said called party's packet-based terminal device.

11. A packet based terminal device addressing system for enabling a calling party using a circuit based terminal device, which is addressable via a telephone number, to initiate a communication connection to a called party who is using a packet-based terminal device, which is addressable via an IP address, comprising:

5 data storage means for storing data in a memory indicative of a correspondence between at least one IP address assigned to a called party's packet-based terminal device and a telephone number assigned to said called party's circuit-based terminal device;

10 terminal device location means, responsive to receipt of data from said calling party indicative of said called party's telephone number corresponding to said called party's circuit-based terminal device, for retrieving data from said memory indicative of said IP address assigned to a called party's packet-based terminal device; and

15 communication connection means for establishing a communication connection between said calling party's circuit-based terminal device to said called party's packet-based terminal device.

12. The packet based terminal device addressing system of claim 11 wherein said communication connection means comprises:

20 terminal device locator means for transmitting said IP address assigned to said called party's packet-based terminal device to at least one packet-based communication service to locate said called party's packet-based terminal device.

13. The packet based terminal device addressing system of claim 12 wherein said communication connection means further comprises:

25 inquiry response means, responsive to receipt of a message from one of said at least one packet-based communication services indicative of a presence of said called party's packet-based terminal device on said one of said at least one packet-based communication services, for extending a communication connection from said calling party's circuit-based terminal device to said one of said at least one packet-

based communication services.

14. The packet based terminal device addressing system of claim 11  
wherein said data storage means comprises:

5 directory means for storing a set of data comprising data indicative of an IP  
address assigned to each of a plurality of a called party's packet-based terminal  
devices.

15. The packet based terminal device addressing system of claim 14  
10 wherein said terminal device location means comprises:

destination selection means for providing said calling party with a list of said  
called party's packet-based terminal devices; and

15 service identification means, responsive to said calling party selecting a one of  
said called party's packet-based terminal devices, for identifying a packet-based  
communication service serving said called party's packet-based terminal device.

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